

Chico

**Golden  
Empire  
Amateur  
Radio  
Society, Inc.**

www.gearsw6rhc.org

"Dedicated to Public Service"

# THE RADIATOR

W6RHC  
IRLP #8170

P.O.Box 202 Chico, CA 95927

May 2021 Newsletter

GEARS Founded August 13, 1939

Since GEARS members are getting vaccinated, we can hopefully start holding in person meetings again starting with our June meeting.

We had a fun GEARS picnic on April 24<sup>th</sup>. It was nice to see folks again. We will hold another BBQ Picnic noon on May 22<sup>nd</sup> at Hooker Oak Park. Come out and join us.

On the GEARS General Meeting Zoom call, we had a great presentation on Python programming by Michael Favor N6FAV and a video by David Casler KE0OG on circular polarization.

You can watch the meeting here: <https://youtu.be/hAVjH40CN8U>

Our next GEARS meeting is May 21<sup>st</sup>.

Kathy is taking orders for GEARS T-shirts, polo shirts, hats and badges. We need to order in quantity so place an order if you'd like one. Here is the shirt order form: [GEARS Order Form](#)

I've posted some old GEARS photos online, see links at the end of this newsletter.

Field Day will be June 26-27. We have reserved the Masonic Lodge again this year. We will also have a BBQ on Saturday. Come on out!

Happy May Birthdays to Drew Mazer KN6MMK, Lee Melen K6DWO and Randall Stone K6RCS.

Things are looking better now. I hope to see all of you sometime soon. Come out to one of our BBQs.

Take care and stay safe.



'73

Jim Matthews K6EST

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530-893-3314



Join GEARS on Facebook  
[www.facebook.com](http://www.facebook.com) For timely  
news and additional information.

## May 2021 Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2 8pm OARS Net	3 7pm GARS Net 8pm ARES Net	4 7:30pm GEARS Net 7pm ARES meeting	5	6 7pm PARS Net 7:30pm Simplex Net	7	8
9 8pm OARS Net	10 7pm GARS Net 8pm ARES Net	11 7:30pm GEARS Net	12	13 7pm PARS Net 7:30pm Simplex Net	14 7pm GARS & OARS Meetings	15
16 8pm OARS Net	17 7pm GARS Net 8pm ARES Net	18 7:30pm GEARS Net	19 GEARS Board Mtg.	20 7pm PARS Net 7:30pm Simplex Net	21 7pm GEARS Meeting online	22 9am OARS Breakfast Noon GEARS BBQ
23 / 30 8pm OARS Net	24 / 31 7pm GARS Net 8pm ARES Net	25 7:30pm GEARS Net	26	27 7pm PARS Net 7:30pm Simplex Net	28	29

**VEC Testing**, FCC License Exam available by appointment. For information or registration call Tom Rider, W6JS 514-9211

**Chico Breakfast** Starting again in June.

**GEARS Board Meeting** Wednesday before general meeting 7pm by zoom.

**OARS Meeting** Second Friday of the month, TBD (To Be Determined)

**GARS Meeting** Second Friday of the month, TBD

**Butte ARES Meeting** 3rd Tuesday, TBD Contact Dale Anderson, KK6EVX 826-3461 for more information.

**GEARS Meeting**, third Friday of the month, online in May, in person starting in June, meeting at 7:00 pm.

**OARS Breakfast** 4th Saturday of the month TBD

### NETS:

OARS Club Net Sunday 8pm 146.655 Mhz - PL 136.5

GARS Club Net: Monday, 7:00 pm 147.105 MHz + PL 110.09

Butte ARES Net Mondays 8pm 145.290 MHz - PL 110.9

Yuba Sutter Club Net Monday 7pm 146.085 MHz + PL 127.3

GEARS Club Net Tuesdays 7:30 PM 146.850 MHz - PL 110.9

PARS Club Net Thursday 7pm 145.290 - PL 110.9

Simplex Net Thursday 7:30 p.m. 146.52 no tone

Yuba Sutter ARES Net Thursdays 7pm 146.085 MHz + PL 127.3

Sacramento Valley Traffic Net Nightly 9:00 PM 146.850 MHz - PL 110.9

### GEARS Century Members

Dale Anderson Kent Hastings

Bennett Laskey Tony Nasr

Scott Roberts

*We thank these members for their extra support.*

### GEARS BBQ Picnic

Saturday May 22nd Noon

Hooker Oak Park picnic area, 1928 Manzanita Ave, Chico

No charge, just bring your own food, beverages and some food to share.



## GEARS April BBQ Picnic



## GEARS Repeaters

GEARS West on St. John  
145.410 MHz PL is 123.0 Negative offset.  
PL both input and output (CTSS)

GEARS East in Forrest Ranch  
146.850 MHz Negative offset. PL 110.9 CTSS  
440.650 MHz Plus offset, PL 110.9 Hz



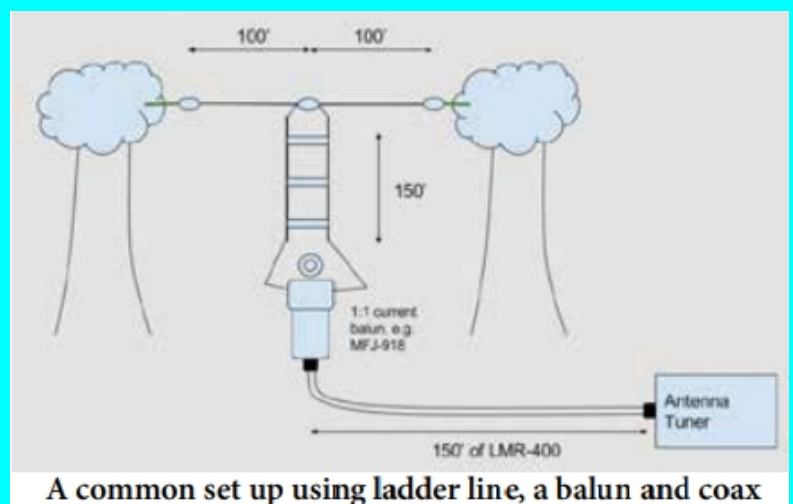
## Transmission Line Basics

By Steve Vansickle, WB2HPR

In a previous article, I stressed the need to pay particular attention to the type of materials that we select for our wire antennas. This time, I'd like to focus on the choice of antenna feedline type and materials of construction. The idea is simply to construct (or purchase) antennas and feedlines that will provide the greatest service life and perform the duty of efficiently transferring RF energy to and from our radio equipment.

The type of feedline you employ with a particular antenna type will usually be governed by the overall antenna system design. In the case of a basic HF wire dipole, for instance, it is quite common to use coaxial cable (coax) from the antenna feed point (most often, the center point) directly to the transmitter or antenna tuner. This is about as basic as it gets, with the coax providing a flexible connection, with small surface area and reasonable tensile strength between the antenna and entry point of the station. The advantage is that the cable is shielded, and can be routed to the radio with relative ease.

This type of transmission line is referred to as unbalanced. At the antenna feed point, a balun may be used to ensure that any reflected RF does not find its way back to the station on the outer surface of the shield. The coax is self-shielding, and provided that you have used a balun and the antenna is cut to the frequency in use, the cable will efficiently couple RF signals between the station equipment and the antenna itself. The degree of shielding is dependent on the type of shielding and the manner in which it is





constructed. Again, you get what you pay for!

Case in point: during the height of the CB radio craze, large quantities of coax were produced – some excellent quality and others – not so good. Often, the shields were loosely woven with a low percentage of coverage. Some of this type of inexpensive coax remains in various supply chains and is something to be mindful of. It usually has contaminating jacket material, and will result in noisy reception and RF interference. It only makes good sense to purchase coaxial cable from reputable suppliers, and get the best that your budget will allow. Buy cheap – buy twice! The same reasoning applies to the connectors that you use on your cable. Get the best that you can obtain, and install them correctly. Not sure how? Get hold of another club member and enlist their help. Their experience will save you time, money and frustration.

Getting back to our basic wire HF wire dipole, another type of transmission line could be “open wire” feeders –popularly known as window line or ladder line. This could take several forms, and could be home brewed, or factory made. The advantage of using ladder line is that it lends itself to making your basic dipole a “multi- band” antenna. By using an antenna matching network (antenna tuner), your dipole can be used on multiple HF bands. Ladder line is not shielded, and special considerations need to be observed when it is routed between the antenna feed point and the station. However, it is balanced, and is very efficient, with high common- mode noise rejection. Again, you can buy good quality ladder line by dealing with known suppliers, like those you see who advertise in QST. Points to consider: are the individual conductors made of soft copper wire, or hard-drawn solid copper? Also, make sure that the insulating jacket is UV rated. Another advantage of ladder line is that there is no need for a balun at the antenna feed point. However, if your antenna tuner is not designed for use with ladder line, you will need to use a balun between the ladder line and the tuner RF output connector. Which ever type of transmission line is chosen, you need to weigh price/quality and materials of construction when selecting your coax or ladder line and connectors. And again, carefully consider how you will weather-proof connectors to ensure reliability. The antenna is the biggest and most important part of your station. The time you spend in selection and construction, as well as installation, will pay great dividends in the form of a reliable efficient antenna system for your station.

For further information, I highly recommend resources such as the ARRL Antenna Book, QST, or The ARRL Handbook, as well as other League publications. As always, observe good safety practices and plan your installation carefully.

Next month – coupling your transmission line to your station equipment.

## **Is an HF Vertical Antenna Right for Your Amateur Radio Station? (Part 1)**

Here are a few points to consider before the antenna's concrete base starts to harden in your backyard:

Probably the most noted attribute of HF vertical antennas is their omni-directional radiation pattern. With an extensive system of radial wires installed at its base, an HF vertical antenna can deliver excellent performance comparable to a horizontal dipole.

HF vertical antennas have a superior low-angle radiation pattern, making them ideal for long-range DXing. However, they wouldn't be your first choice for making short-range contacts closer to home.

We can't emphasize this enough: If you want true HF performance, don't skimp on deploying ground radial wires. Think you've gone overboard? Add some more and monitor how your antenna performs. Hustler BTV Series 4-, 5-, or 6-band verticals are great examples of antennas that vastly improve with a radial system in place. Check Hustler BTV manual for in-depth instructions and advice on adding a radial system to your quarter-wave vertical antenna. If getting on your knees to run wire isn't your cup of java (or you can't find someone to do it for you), you might want to consider another option. HF directional beam antennas (when positioned correctly) will typically perform better than an HF vertical. However, low-profile verticals are less likely to draw the attention of neighbors who may not appreciate the sight of a sprawling 32-foot, 8-element Yagi outside their bedroom window.

HF vertical antennas come in either monoband or multiband varieties. Multiband HF verticals often employ traps or loading coils on the vertical element. The loading coils or traps (paralleled tuned circuits) electrically add or subtract to the length of the antenna based on the frequency of the signal. The use of coils and traps allows multiband verticals to remain relatively short. In the case of DX Engineering's 160M monoband vertical, a capacity hat adds horizontal elements that help keep its length to a manageable 55 feet.

When used in a multi-vertical array, verticals can even provide low-band directivity.

HF vertical antennas make good choices in tight areas. Many require no guying and even less space. For some verticals, Hams can choose from ground- or roof-mounted options.

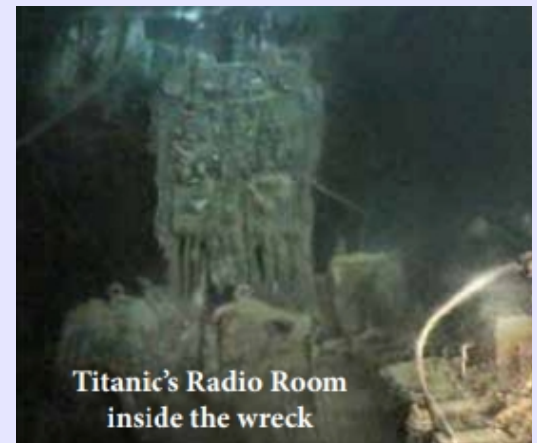
Next month, part 2.

## Plans to Retrieve Titanic Wireless Equipment Put on Indefinite Hold

RMS Titanic, Inc., (RMST) the company that owns salvage rights to the Titanic shipwreck, has indefinitely put off its plans to retrieve the vessel's radio equipment for exhibit. The company cited the coronavirus pandemic for the delay, according to a court filing the company made on January 29. The Atlanta-based company said its plans have faced "increasing difficulty associated with international travel and logistics, and the associated health risks to the expedition team." RMST's primary source of revenue comes from its exhibits of its vast collection of Titanic relics, which have been closed or seen only limited attendance due to virus-related restrictions.



RMST — a subsidiary of Premier Exhibitions and the "salvor-in-possession" of the Titanic wreck site — said its planned expedition to recover the ship's wireless station equipment remains a top priority, however, and will "take place as soon as reasonably practicable." The Marconi-equipped station transmitted the distress calls after the Titanic (on its maiden voyage) struck an iceberg some 370 miles off the coast of Newfoundland in 1912 and began sinking. The transmissions, heard by some nearby vessels, have been credited with helping rescue some 700 passengers in lifeboats deployed from the Titanic, but about 1,500 passengers were lost in the disaster. RMST has said the radio transmitter could unlock some of the secrets about a missed warning message and distress calls sent from the ship.



The coronavirus pandemic aside, RMST has been in an ongoing legal battle with the US government over whether the recovery operation would be legal. In May of 2020, a US federal judge in Virginia gave permission to retrieve the ill-fated ship's wireless gear. The judge ruled that the radio gear has "significant historical, educational, scientific, and cultural value" and could soon be lost within the rapidly decaying wreck, and said the company would be permitted "minimally to cut into the wreck" to access the radio room.

RMST has said it would try to avoid cutting into the ship, noting that the radio room may be reachable via an already open skylight. But, the National Oceanic and Atmospheric Administration (NOAA) has contended that the retrieval expedition is still prohibited under US law and under an international agreement between the US and the UK. NOAA has argued that any benefit to be realized from cutting into the vessel to recover the Marconi equipment would not be "worth the cost to the resource and not in the public interest." RMST sought permission to carry out what it called a "surgical removal and retrieval" of the Marconi radio equipment, which is in poor shape after more than a century under water. The undersea retrieval would mark the first time an artifact was collected from within the Titanic, which many believe should remain undisturbed as the final resting place of the victims of the maritime disaster.

The wreck sits on the ocean floor some 2 1/2 miles beneath the surface and remained undiscovered until 1985. RMST plans to use a manned submarine to reach the wreck and would then deploy a remotely controlled submarine to retrieve the radio equipment.

## GEARS Club Officers:

President.....Jim Matthews, K6EST  
Vice-President.....Paul Stewart, N6PAS  
Secretary.....Open  
Treasurer.....Kathy Favor, K6FAV  
ARES.....Dale Anderson, KK6EVX  
Director.....Bennett Laskey, K6CEL  
Director.....Kent Hastings, WA6ZFY  
Director.....Rich Astley, N3UOR  
Past President.....Tom Rider, W6JS  
VEC.....Tom Rider, W6JS

GEARS Radiator past issues are available at:

<https://drive.google.com/drive/folders/0B-jPu0P0RkymZ2Q1WDR6THZLNmM?usp=sharing>

Photos from GEARS Steak 1969

<https://photos.app.goo.gl/euv1NPHCjtwAcwT69>

Photos from GEARS Steak 1989

<https://photos.app.goo.gl/n66qqKsNLdwTgJBc6>

Photos from GEARS Ham Fest 1989

<https://photos.app.goo.gl/kq29mD5io6wXd9fk6>

Photos from GEARS recent GEARS meetings

<https://photos.app.goo.gl/kq29mD5io6wXd9fk6>

Photos GEARS April BBQ Picnic



*"One day, son, all of these perfectly good A.C. adapters, which have long outlived the products they were originally designed for, will be yours."*